



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
[www.uspto.gov](http://www.uspto.gov)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/826,484	04/16/2004	James H. Schaffner	B-4032DIV2 621826-1	1430
7590	03/21/2006			EXAMINER
Richard P. Berg c/o LADAS & PARRY Suite 2100 5670 Wilshire Boulevard Los Angeles, CA 90036-5679				TRAN, CHUC
			ART UNIT	PAPER NUMBER
			2821	
			DATE MAILED: 03/21/2006	

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>
	10/826,484	SCHAFFNER ET AL.
	<b>Examiner</b>	<b>Art Unit</b>
	Chuc D. Tran	2821

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) Responsive to communication(s) filed on 23 December 2005.
- 2a) This action is FINAL.                    2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) Claim(s) 12-40 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) Claim(s) 25-40 is/are allowed.
- 6) Claim(s) 12-14 and 24 is/are rejected.
- 7) Claim(s) 15-23 is/are objected to.
- 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on \_\_\_\_\_ is/are: a) accepted or b) objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) All    b) Some \* c) None of:
  1. Certified copies of the priority documents have been received.
  2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | Paper No(s)/Mail Date. _____  |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
|  | 6) <input type="checkbox"/> Other: _____                                    |

## DETAILED ACTION

### *Remarks*

This is a response to the Applicant's Amendment submitted on 12/23/05. By virtue of this amendment claims 12-40 are now remaining in the instant application.

### *Response to Arguments*

1. Applicant's arguments, filed December 23, 2005, with respect to the rejection(s) of claim(s) 12-40 under 102 (b) have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of Bruno et al (USP. 6,538,601) and Sreenivas (USP. 5,821,908).

### *Claim Rejections - 35 USC § 102*

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claim 12 is rejected under 35 U.S.C. 102(e) as being anticipated by Bruno et al (USP. 6,538,601).

Regarding claim 12, Bruno et al disclose a robust GPS system in Fig. 4, comprising:

- a plurality of satellites (S1-S4) for transmitting a different GPS signal (Col. 4, Line 4);
- at least one terrestrial GPS receiver (300) for receiving the GPS signals transmitted by visible ones of the GPS satellites (320a) (Col. 7, Line 5) (Fig. 8).

***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 13-14 and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bruno et al in view of Sreenivas (USP. 5,821,908).

Regarding claims 13 and 24, Bruno et al disclose the robust GPS system as set forth in the claims except the terrestrial receiver includes a Luneberg Lens. Sreenivas disclose (a) a Luneberg Lens (94), and a spherically shape focal surface spaced from its outer surface (Fig. 5); (b) a plurality of patch antenna elements (96) disposed along the focal surface of the Luneberg Lens (Fig. 5); and (c) a power combiner (72) for combining signal received by the plurality of patch antenna elements (70) (Fig. 4A) (Col. 6, Line 27). Thus, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Bruno et al by providing the terrestrial receiver includes a Luneberg Lens as taught by Sreenivas. The ordinary artisan would have been motivated to modify Bruno et al in the manner described above for focusing a primary beam from the at least one phased array antenna unit on the local surface of the lens (Sreenivas. Col. 2, Line 30).

Regarding claim 14, Sreenivas disclose that at least one feed point (108) for receiving signals, the signals at the feed point being selectively routed to the power combiner based upon certain predetermined signal criteria (Col. 6, Line 25).

***Allowable Subject Matter***

6. Claims 25-40 are allowed.

***Reasons for Allowance***

7. The following is an examiner's statement of reasons for allowance:

Prior art fails to disclose the combination of the limitation as set forth in the claim: a method of deploying air vehicles each serving as a platform for a secondary GPS position and timing reference transmitter, each platform including a receiver for receiving GPS signals from the GPS satellite constellation; transmitting the secondary GPS position and timing reference information from the transmitters on the air vehicles, the secondary GPS position and timing reference information being based upon the GPS signal received from the GPS satellite constellation at each platform; and receiving the secondary GPS position and timing reference information from the transmitters on one or more of the air vehicles at the GPS receiver in independent claim 25.

Claims 26-40 are allowable for the reasons given above because of their dependency status from independent claim 25.

8. Claims 15-23 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

9. The following is a statement of reasons for the indication of allowable subject matter:

Prior art fails to disclose or suggest each patch antenna elements has at least two feed point for receiving circularly polarized signals.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

*Citation of relevant prior art*

10. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Prior art Anzil (USP. 6,449,485) disclose technique for mobile wireless device location.

Prior art Wickstrom et al (USP. 6,408,178) disclose system and method for resolving GPS pseudo-range.

Prior art Procopio (USP. 3,757,333) disclose receiving antenna system.

Prior art Quinn (USP. 6,594,582) disclose GPS compound eye attitude and navigation system.

*Inquiry*

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Chuc D. Tran whose telephone number is (571) 272-1829. The examiner can normally be reached on M-F Flex hours.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Don Wong can be reached on (571) 272-1834. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2821

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

TC  
March 18, 2006



HOANG V. NGUYEN  
PRIMARY EXAMINER